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November 16, 2001

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**VIA ELECTRONIC FILING AND HAND DELIVERY**

**EX PARTE**

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

**Re: Ex Parte Communication in ET Docket No. 98-206; RM-9147; RM-9245; Applications of Broadwave USA et al., PDC Broadband Corporation, and Satellite Receivers, Ltd., to provide a fixed service in the 12.2-12.7 GHz Band; Requests of Broadwave USA et al. (DA 99-494), PDC Broadband Corporation (DA 00-1841), and Satellite Receivers, Ltd. (DA 00-2134) for Waiver of Part 101 Rules.**

Dear Ms. Salas:

On November 15, 2001, Sophia Collier and Antoinette Cook Bush of Northpoint Technology, Ltd. ("Northpoint") and Alan Martin of the Livingston Group met with the following officials in the Cable Services Bureau ("CSB"): Kenneth Ferree, Bureau Chief; Barbara Esbin, Associate Bureau Chief; and Eloise Gore, Special Assistant for Law and Policy.

Also on November 15, 2001, Sophia Collier of Northpoint met with Monica Shah Desai, Legal Advisor to Commissioner Martin.

During the meeting with CSB officials, Northpoint discussed various technical issues relating to terrestrial/satellite sharing of the 12.2-12.7 GHz frequency band. Northpoint's presentation materials, which summarize the substance of the points covered, have already been filed several times in this docket, most recently as an attachment to Northpoint's October 17, 2001, ex parte describing a meeting with Julius Knapp of the Office of Engineering and Technology.

In the course of the meeting, Northpoint promised to furnish the participants with copies of certain filings previously made in this docket. Attached hereto as Attachment A, therefore, is an excerpt from comments filed by DirecTV on March 12, 2001,

indicating DirecTV's support of equivalent power flux density ("epfd") as the appropriate parameter for the Commission to use when establishing sharing criteria for satellite and terrestrial users of the 12.2-12.7 GHz band. Also attached as Attachment B is an excerpt from the technical appendix to Northpoint's reply comments filed on April 5, 2001, documenting that, although DirecTV now advocates an epfd limit corresponding to a C/I ratio of 28-32 dB, DirecTV and other satellite operators had originally treated as acceptable an epfd limit corresponding to a C/I ratio of 19 dB or 20 dB. Northpoint has consistently advocated that the Commission adopt sharing rules setting epfd limits corresponding to a C/I ratio of 20 dB. Attachment C is a table filed by Northpoint in the technical appendix to its March 12, 2001, comments setting forth the appropriate epfd limits in different regions of the continental United States.

At the meeting with Ms. Desai, Ms. Collier addressed the issue of on-site mitigation, which has been overblown by the DBS industry. Ms. Collier noted that Northpoint does not seek targeted or preferential access to DBS customers as part of the mitigation process and has never sought access to the DBS industry's subscriber lists. Ms. Collier also emphasized that careful site selection and system design in the deployment of its transmitters would minimize the number of homes in a mitigation zone. She noted that in experimental tests, factors such as natural shielding, careful transmitter placement, power control, and other techniques that did not require visiting any DBS subscriber's home were used successfully to avoid harmful interference with DBS signals. Not even in the DBS industry's own tests of Northpoint's technology was there even a single instance of harmful interference to any DBS subscriber. No on-site mitigation was ever needed.

Ms. Collier reiterated Northpoint's concern that whatever rules the Commission might adopt regarding on-site mitigation should provide some incentive for the DBS industry to avoid imposing unnecessary costs on Northpoint. Northpoint fully expects *always* to bear the cost of any necessary mitigation. But where a DBS operator seeks to require mitigation in circumstances that turn out, upon appropriate investigation, to be unnecessary, the DBS operator should compensate Northpoint for expenses incurred in investigating and demonstrating that no such mitigation is needed. Such a regime would give the DBS industry the appropriate incentive to seek mitigation where truly needed, but not to abuse the mitigation process as a means of unfairly running up Northpoint's costs.

Ms. Collier pointed out that the recent field tests by MDS America, Inc. provide no reliable data regarding MDS America's ability to share spectrum with DBS operators without causing harmful interference. Northpoint's arguments on this topic are summarized in its *ex parte* letter filed in this docket on November 2, 2001.

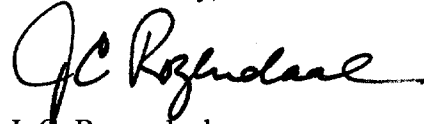
Finally, Ms. Collier emphasized the need for nationwide licensing of terrestrial service providers if they are to provide meaningful competition to cable services. By applying for licenses in every domestic local broadcast market, Northpoint is better positioned to reap scale and scope economies that eluded previous terrestrial wireless

Ms. Magalie Roman Salas  
November 16, 2001  
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entrants into the MVPD market. Northpoint believes that the ability of MMDS and LMDS operators to be effective competitors to cable was hindered in part by the Commission's decision to license them in a geographically piecemeal fashion. The lack of a national network left these would-be competitors in a weak position when bargaining for program access and left them with too small a customer base over which to spread the fixed costs of their operations. Ms. Collier noted that nationwide licensing to promote meaningful competition is particularly important in view of the planned merger of DirecTV and EchoStar, which will reduce competition, especially in rural areas.

This letter will be filed electronically in ET Docket 98-206, RM-9147, and RM-9245. In addition, twelve copies of this letter will be filed in paper form – two for inclusion in each of the above-referenced application files. Please contact me if you have any questions.

Yours sincerely,

A handwritten signature in black ink, appearing to read "JC Rozendaal", with a long horizontal flourish extending to the right.

J. C. Rozendaal  
*Counsel for Northpoint  
Technology, Ltd.*

attachments

cc: meeting participants

Attachment A

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 of the	)	ET Docket No. 98-206
Commission's Rules to Permit Operation	)	RM-9147
of NGSO FSS Systems Co-Frequency with	)	RM-9245
GSO and Terrestrial Systems in the Ku-	)	
Band Frequency Range;	)	
	)	
Amendment of the Commission's Rules	)	
to Authorize Subsidiary Terrestrial Use	)	
of the 12.2-12.7 GHz Band by Direct	)	
Broadcast Satellite Licensees	)	
and Their Affiliates; and	)	
	)	
Applications of BroadWave USA, PDC	)	
Broadband Corporation, and Satellite	)	
Receivers, Ltd. to Provide a Fixed Service	)	
in the 12.2-12.7 GHz Band	)	

COMMENTS OF DIRECTV, INC.

DIRECTV, INC.

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Counsel for DIRECTV, Inc.

Dated: March 12, 2001

**B. Derivation of an epfd Interference Limit from the Proposed Sharing Criteria and Sharing Principles**

**1. The Epfd Concept**

Informed by the sharing criteria and principles set forth above, the next step is for the Commission to establish an engineering parameter to be used as an interference limit. This limit incorporates the sharing principles in a practical way, in that when the limit is satisfied in the field, these sharing criteria are also satisfied. In the case of NGSO FSS sharing with DBS, the agreed limit is defined by the engineering parameter of equivalent power flux density, or "epfd," whose values are specified by "masks" for particular DBS antenna diameters and percentages of time. These masks are universal for all points on the earth.

Epfd can also be used as the interference limit parameter for DBS-MVDDS sharing. In this case, however, the MVDDS epfd will not vary over time, and therefore epfd masks as a function of time are not applicable to this situation. Fixed epfd "limits" can be generated for each DBS link to be protected at any given MVDDS transmitter location. These limits will be different for each MVDDS transmit site, and will manifest themselves as individual epfd contours around the MVDDS transmitter site, one contour for each of the different DBS links that require protection. The limits or contours are a function of many variables, including the direction of the wanted DBS satellite from the victim receiver location. At any given MVDDS transmit site these contours will vary from link to link in shape as well as in magnitude. They will also vary from MVDDS transmit site to transmit site because of variations in satellite e.i.r.p..

In the Further Notice, the Commission has suggested the alternative use of the carrier to interference (C/I) power ratio as the interference limit parameter for the generation of contours. However, an epfd limit is preferred to a C/I power ratio because of the multiple links requiring

protection at any proposed MVDDS transmitter site. In particular, each link will generate its own required C/I ratio for protection. The carrier power "C" will in general be different for each link. As such, it will be cumbersome to reduce the C/I ratios of multiple links to absolute interference powers so they can be directly compared. If instead a maximum interference epfd is calculated for each link, then the epfd values can be directly compared.

For each proposed MVDDS transmitter location, the required epfd values can be easily calculated. A modified version of the interference model already proposed by the FCC in Appendix H to the Further Notice can be used for this calculation. The results of the calculations are epfd contours within which the interference level rises above the "2.86%" criterion.<sup>31</sup>

## 2. Realization of Required epfd Values

The current proposed designs of MVDDS transmitter sites by Northpoint do not meet the requirement that the power flux density over habitable land be below the "2.86%" criterion. DBS operator field tests in Oxon Hill, MD confirmed this fact.<sup>32</sup> To achieve this requirement, lower

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<sup>31</sup> Although epfd is the preferred approach, RSSi values (Received Signal Strength assuming an isotropic receive antenna) could also be used as the limiting parameter. This value is mathematically very similar to epfd in that a received interference level is normalized to a specific victim receive antenna gain value. Epfd normalizes actual interference power flux density to the peak gain of the victim antenna, whereas RSSi normalizes received interference signal strength to a 0 dBi gain antenna. The RSSi calculation technique was used to generate contours found in DIRECTV's *ex parte* filing "Conclusions to Date Regarding Harmful Interference From a Proposed Northpoint Technology Terrestrial System Operating in the DBS Downlink Band, 12.2-12.7 GHz" (Jan. 27, 2000) ("DIRECTV January 2000 Ex Parte").

<sup>32</sup> See DIRECTV and EchoStar, "Report of Interference Impact on DBS Systems from Northpoint Transmitter Operating at Oxon Hill, MD, May 22 to June 7, 2000" (July 25, 2000) ("Oxon Hill Report"); see also DIRECTV and EchoStar, "Rebuttal to Northpoint's Evaluation and Analysis of DBS-Terrestrial Compatibility Testing at Oxon Hill, Maryland" (Sept. 2000).

**Technical Appendix to**  
**Reply Comments of Northpoint Technology, Ltd.**  
**on the**  
**Further Notice of Proposed Rulemaking**  
**in ET Docket No. 98-206**

**April 5, 2001**

growing DBS provider," currently garnering 20% more new DBS subscribers than DirecTV.<sup>9</sup> Despite having 150% to 200% more "increase in outage" than DirecTV, DISH Network was ranked number one in customer satisfaction among satellite cable TV subscribers by the J.D. Power and Associates 1999 and 2000 Cable/Satellite TV Customer Satisfaction studies. Clearly these differences in outage (150% - 200% or 3-15 hours per year) between DirecTV and Echostar are not noticeable by consumers and can certainly not be considered harmful interference.

### 1.2 An EPFD Limit Based on a 20 dB C/I Would Prevent Harmful Interference

DBS proposes to limit Northpoint to a 2.86% increase in outage, but this is unnecessary, as a different metric will protect from harmful interference. As shown in the Comments of Northpoint Technology, the change in DBS performance due to Northpoint's proposed EPFD limit is less than six minutes of additional outage in an average month for the very weakest DBS link studied.<sup>10</sup> This is below the level of consumer perception and thus is not harmful. All other DBS links would have lower — in most cases significantly lower — forecast increased outage. In most cases, in the tiny area around the Northpoint transmitter, increased outages would be less than one minute in an average month, after accounting for television "on" time.<sup>11</sup> In no case would Northpoint ever be the primary cause of an outage.

In fact, DBS comments in the Commission's record agree that the Northpoint proposal (for a C/I of 20 dB) is not harmful. For example, DirecTV used a 20% increase in outage (which

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<sup>9</sup> Echostar at 55% vs. DirecTV at 45% annual growth rate. See Echostar Press Release, *Echostar Reports Record Results For Fourth Quarter 2000*, Mar. 13, 2001 ("DISH Network, the fastest growing satellite television provider in the United States. . ."). available at: [http://www.corporate-ir.net/ireve/ir\\_site.zhtml?ticker=dish&script=410&layout=-6&item\\_id=158165](http://www.corporate-ir.net/ireve/ir_site.zhtml?ticker=dish&script=410&layout=-6&item_id=158165), visited March 20, 2001.

<sup>10</sup> See Northpoint Comments, Technical Appendix, Table 2.

<sup>11</sup> See Northpoint Comments, Technical Appendix, Table 3.

they equated to a C/I ratio of 19 dB) for an estimate of acceptable interference in "Terrestrial Interference in the DBS Downlink Band."<sup>12</sup> At the beginning of this proceeding in 1998, another DBS proponent stated, "Tempo believes the TI DBS report by DirecTV, which specified a C/I ratio of 19 dB, causing a reduction of 20% availability in subscriber systems, is more accurate" as a standard for protection.<sup>13</sup> Echostar stated at that same time "Echostar estimates that a more acceptable Carrier-to-Interference level would be at least 20 dB (equal to the cross polarization isolation level of the Low Noise Block Down Converter with Integrated Feedhorn)."<sup>14</sup> As these statements show DBS acknowledges that 19 - 20 dB C/I is not harmful, far from it. The DBS industry cannot walk away from this record now.

Finally, the DBS industry greatly exaggerates the extent of the mitigation zone. As noted in the comments of Northpoint, very few consumers would experience the maximum power allowed under Northpoint's proposed EPFD limit.<sup>15</sup> The overwhelming majority would experience a much lower power level. Based on the naturally occurring free space loss phenomena inherent in all radio communication services, less than 0.005% percent of DBS customers would be in a mitigation zone.<sup>16</sup> The robust nature of the Northpoint system was demonstrated in the Washington, D.C., testing when Northpoint operated at full power during Hurricane Floyd without a failure to DBS at the Arlington test site, selected for its worst-case location within a hypothetical mitigation contour.<sup>17</sup>

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<sup>12</sup> DirecTV Report, *Terrestrial Interference in the DBS Downlink Band*, Apr. 11, 1994.

<sup>13</sup> Tempo Satellite Comments, RM 9245, ¶5a (FCC filed Apr. 20, 1998).

<sup>14</sup> Echostar Communications Opposition, RM 9245, at 9 (FCC filed Apr. 20, 1998).

<sup>15</sup> See Northpoint Comments at 8.

<sup>16</sup> See Northpoint Comments, Technical Appendix, Annex B, Table 4.

<sup>17</sup> See Progress Report WA2XMY, Northpoint - DBS Compatibility Testing, October, 1999, at 20.

**Technical Appendix to  
Comments of Northpoint Technology, Ltd.  
on the  
Further Notice of Proposed Rulemaking  
in ET Docket No. 98-206**

**March 12, 2001**

Northpoint's proposal for an appropriate EPFD limit for DBS-Northpoint sharing.

### 2.3 Northpoint Proposal for Interference Mitigation Criterion

Systems operating in accordance with the allocation to the fixed service carry an obligation not to cause harmful interference to DBS systems.<sup>13</sup> Northpoint supports the existing allocation and accepts the obligation to not cause harmful interference to DBS.

The Commission defines harmful interference as "serious degradation" or "repeated interruption."<sup>14</sup> In devising specific rules for Northpoint operation in the 12.2-12.7 GHz band, the Commission should not adopt a more stringent requirement than is specified in the existing regulations.

Northpoint proposes that the following EPFD limits are consistent with the current allocation and regulations and should be adopted.

**Table 1: Northpoint EPFD Limits for DBS 45 cm Antenna<sup>15</sup>**

Location in U.S.	EPFD (dBW/m <sup>2</sup> – 40 kHz)
Southeastern U.S. (FL, GA, AL, MS, LA)	-156.7
Southern U.S. (NM, TX, OK, AR, TN, SC, NC)	-158.7
Northeastern U.S. (ND-KS-VA-ME)	-160.5
Western U.S. (CA-AZ-CO-MT-WA)	-163.0

<sup>13</sup> See 47 C.F.R. § 101.147(p); *id.* § 2.106 n.844.

<sup>14</sup> *Id.* § 2.1.

<sup>15</sup> These limits provide a minimum carrier to interference isolation of 20 dB, using the DBS EIRP as given in "Answers from the DBS Operators to Questions Posed by the MITRE Corporation," at 3 ("DBS Response") (attached to Letter to Jim Chadwick, MITRE Corp., from James H. Barker, Latham & Watkins, and Pantelis Michalopoulos, Steptoe & Johnson (Jan. 31, 2001)).

## CERTIFICATE OF SERVICE

I, Shonn Dyer, hereby certify that on this 16th day of November, 2001, copies of the foregoing, were served by hand delivery\* and/or first class United States mail, postage prepaid, on the following:

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